Breast pumps

Clinical Policy ID: CCP.1051

Recent review date: 2/2025

Next review date: 6/2026

Policy contains: Electric breast pumps, hospital breast pumps, manual breast pumps.

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Coverage policy

Breast pumps may be helpful for the initiation or continuation of breastfeeding when any of the following criteria are met (American Academy of Family Physicians, 2022; American College of Obstetricians and Gynecologists, 2023; Health Resources and Services Administration, 2024; Meek, 2022 [American Academy of Pediatrics]):

- The mother is unable to nurse and provide adequately for her infant(s).
- (Temporarily) while the mother takes medications that can be found in breast milk and would injure her infant(s).

Choice of breast pump depends on several factors, including infant need, the length of the breastfeeding parent's absence from the infant, and maternal preference. A hand pump may be used when mother and infant are separated briefly, and an electric pump or a hospital-grade electric pump for longer and more frequent separations (American Academy of Family Physicians, 2022).
A new set of breast pump supplies (i.e., initial tubing, shields, and bottles) is medically necessary with each subsequent pregnancy (American Academy of Family Physicians, 2022).

Limitations

No limitations were identified during the writing of this policy.

Alternative covered services

Bright Start® services and lactation specialists as part of hospital delivery.

Background

Several professional organizations have reiterated strong support for the exclusive nutrition of infants through breast milk for the first six months of life, and up to and exceeding the first year, citing studies that have demonstrated the benefits of breast milk over other sources of nutrition (American College of Obstetricians and Gynecologists, 2023; Meek, 2022; World Health Organization, 2023). Benefits to breastfeeding found in the medical literature include:

- Improved health to infants. Benefits include reduced risk of otitis media, urinary tract infection, respiratory tract infection, bronchiolitis, necrotizing enterocolitis, atopic dermatitis, gastroenteritis, inflammatory bowel disease, diabetes, childhood leukemia (acute lymphocytic leukemia and acute myeloid leukemia), sudden infant death syndrome, infant mortality, asthma, allergies, and celiac disease.
- Improved health to mothers. Benefits include reduced risk of postpartum blood loss, postpartum depression, risk of subsequent child abuse and neglect (after adjusting for risk factors), and an increase in rapid uterus involution.

The American Academy of Pediatrics' recommendations also include contraindications to breastfeeding, including presence of certain infant metabolic disorders, and maternal conditions, such as tuberculosis, brucellosis, human T-cell lymphotropic virus type I or II, varicella, H1N1 influenza, and presence of particular narcotic drugs. Reductions in smoking, alcohol consumption, and a balanced diet are also recommended for breastfeeding mothers (Meek, 2022).

Lack of knowledge, social norms, poor family or social support, lactation problems, and employment present barriers to effective breastfeeding. Current 2020 data showing the percentages of infants who are breastfed at one year (37.6%) and breastfed exclusively through the first six months of age (25.4%) are well below the Healthy People 2030 goals (54.1% and 42.4%, respectively) (U.S. Department of Health and Human Services, Undated). Disparities between racial and ethnic groups have persisted; among 2019 U.S. births, Asians had the highest proportion of infants initially breast fed (90.3%), followed by Hispanics (87.4%), whites (85.5%), and blacks (73.3%) (Chiang, 2021).

When a mother has to initiate or maintain breastfeeding, the mother's own milk supply needs to be protected and/or increased by adequate pumping or manual expression and safe storage practices. Breast pumps are devices that extract milk from lactating women. Pumps can be manual, electric, or the hospital type needed to provide breast milk for premature infants. Manual pumps require repetitive use of pressure generated by hand or foot power, but they may cause fatigue and are often less efficient than electric pumps. Personal-use electric pumps are larger than manual pumps and generate greater suction. As such, the time required for expression of milk is shorter. These pumps are intended for a single user and may require more sterilization of the tubing. Hospital-grade electric pumps are intended for multiple users with accessories for each individual. They may provide greater stimulation to maintain adequate lactation than either the manual or personal electric pump (American Academy of Family Physicians, 2022).

Findings

Guidelines

Current professional guidelines and health policy support efforts to promote breastfeeding. Breast pump provision is an important component of these efforts. There is less consensus on the optimal type of pump to provide.

In accordance with the provisions in the Affordable Care Act, the Health Resources and Services Administration's Women's Preventive Services Guidelines recommend comprehensive lactation support services, which includes

breastfeeding equipment and supplies, during the antenatal, perinatal, and postpartum periods to optimize the successful initiation and maintenance of breastfeeding. Breastfeeding equipment and supplies include, but are not limited to, double electric breast pumps (including pump parts and maintenance) and breast milk storage supplies. The guidelines stress prioritizing access to double electric pumps and not having access be predicated on prior failure of a manual pump. Breastfeeding equipment may also include equipment and supplies as clinically indicated to support mother and infant with breastfeeding difficulties and those who need additional services (Health Resources and Services Administration, 2024).

The U.S. Preventive Services Task Force (2016) recommends providing interventions during pregnancy and after birth to support breastfeeding, which include breast pumping as part of lactation support.

The American Academy of Family Physicians recommends that all babies, with rare exceptions, be breastfed and/or receive expressed human milk exclusively for the first six months of life, and longer as mutually desired. The breastfeeding parent's own milk supply should be protected and/or increased as needed by adequate pumping or manual expression. The optimal method of milk expression varies with the length of the breastfeeding parent's absence from the infant and individual preference. A hand pump may be used when mother and infant are separated briefly, and a hospital-grade electric pump for longer and more frequent separations (American Academy of Family Physicians, 2022). The American College of Obstetricians and Gynecologists (2023) practice advisory aligns with these recommendations.

The American Academy of Pediatrics lists insurance coverage for lactation support and breast pumps among its key recommendations for policies that protect breastfeeding (Meek, 2022).

Evidence review

For mothers who wish to breastfeed, breast pumps provide effective support for exclusive breastfeeding by inducing lactation, relieving engorgement, and allowing for breast milk expression and storage when direct breastfeeding does not occur. Breast pumps may be provided as a part of comprehensive lactation support services during the antenatal, perinatal, and postpartum periods to optimize the successful initiation and maintenance of breastfeeding. However, improving access to breast pumps does not necessarily improve breastfeeding outcomes, which suggests that other factors may be involved that are barriers to achieving breastfeeding goals (Moran, 2015). Stigma, lack of support, and workplace barriers are obstacles that hinder continued breastfeeding.

A systematic review of 52 fair- to good-quality studies, produced for the U.S. Preventive Services Task Force, found breastfeeding support and education provided by professionals and peers to individual women, regardless of the mother's age, was associated with an increase in the duration of any and exclusive breastfeeding. Five studies included manual or electric breast pumps as a component of lactation support provided in prenatal, peripartum, and postpartum periods (Patnode, 2016).

There is no strong evidence supporting one method of milk expression (by hand or by any type of pump) over another (Becker, 2016). Choice of breast pump will depend on the reasons why the mother wishes to express milk and the contexts in which they do so. Social support is essential to the initiation and maintenance of milk expression to overcome barriers to breastfeeding. Perceived comfort and usefulness of the device have a positive influence on maternal health and wellbeing, as do understanding the reasons for using a breast pump (Becker, 2021).

A systematic review of 47 studies, 38 of which were randomized controlled trials, assessed ways to address growth failure in infants under six months of age, most of whom were pre-term. Methods analyzed included cup, bottle, nasogastric tube, early progressive, bovine/cow milk, high volume, electric breast pump, Galactagogue feeding, macronutrient fortified formula, cream supplementation, and fortified human milk formula feeding. Electric breast pumps had a mixed effect on feeding practices in terms of maternal milk volume compared to

education and support, non-electric breast pumps, or hand expression. Only human milk compared to formula intervention had a positive effect on morbidity among preterm infants, while no intervention had any positive effect on mortality (Rana, 2020).

The evidence associating pump use with longer breastfeeding duration is mixed. Sociodemographic factors are important contributors to differences in breastfeeding rates and use of breast pumps across populations. A review of 10 studies showed mothers in the workplace who received a breast pump for one year experienced longer duration of exclusive breastfeeding (8.3 months versus 4.7 months), but older maternal age, working part-time, longer maternity leave, and white ethnicity were also associated with longer breastfeeding duration (Kim, 2019).

A large cross-sectional analysis of 19,719 mothers in the United States found age younger than 18 years, Medicaid enrollment, race, and ethnicity other than non-Hispanic White, lower income or education, and unmarried status was associated with lower pump use ($P < .001$). Pump use was associated with a 37% lower risk of breastfeeding cessation (adjusted hazard ratio 0.63, 95% confidence interval 0.56 to 0.70) and 21 additional weeks of breastfeeding on average (Nardella, 2024).

There is insufficient evidence to assess the effectiveness of breast pumping with or without other expression methods for improving breastfeeding rates in specific populations of women who are less likely to breastfeed, such as those of African American ancestry, with overweight or obesity, or with diabetes, or following a Caesarean section. Most studies lack sufficient rigor, power, and detail to understand the impact of maternal and infant social, educational, and physical support that could help mothers achieve optimal breastfeeding outcomes. (Beake, 2017; Bream, 2017; Fair, 2019; Moorhead, 2024).

A Cochrane review examined 41 randomized and quasi-randomized trials of different methods of milk expression. Trials of pumps compared one or more type of pump versus hand expression (11 trials), one type of pump to another (14 trials), and both hand expression and pump types (three trials). The risk of bias of the included studies was variable as were the study protocols and measured outcomes. There is no strong evidence supporting one method of milk expression (by hand or by any type of pump) over another with respect to maternal satisfaction, pain or discomfort, or milk contamination, volume, or composition. Effects on breastfeeding rates were not analyzed. However, there were consistent, clinically relevant and positive outcomes for milk expression related to techniques such as initiation of pumping soon after birth if the infant is not breastfeeding, increased frequency of pumping, warming of breast, massaging of breast, and various methods to encourage relaxation (Becker, 2016).

Two randomized controlled trials published since the Becker (2016) review confirm these findings. In 190 mothers who delivered before 34 completed weeks of gestation, expressed breast milk volume during the first postnatal week was comparable between manually expressing or with a breast pump (Dhanawat, 2022). In mothers exclusively breastfeeding their healthy term infant at three- to four-weeks post-partum, two different breast pumps were equally effective in the total amount of milk expressed and pattern of milk flow. In addition, provision of pumps through direct access or voucher to mothers who have already established exclusive breastfeeding did not significantly influence the likelihood of the mother breastfeeding at six months or meeting her own breastfeeding goals (Fewtrell, 2019).

For treating breast engorgement during lactation, another Cochrane review found one small study (n = 16) comparing electromechanical breast massage followed by mechanical pumping versus manual breast massage followed by manual pumping. There was insufficient evidence to draw conclusions from this study (Zakarija-Grkovic, 2020).

In 2025, we reorganized the findings section, added new systematic reviews and large studies, and modified the coverage criteria to better align with guideline recommendations.

References

On November 18, 2024, we searched PubMed and the databases of the Cochrane Library, the U.K. National Health Services Centre for Reviews and Dissemination, the Agency for Healthcare Research and Quality, and the Centers for Medicare & Medicaid Services. Search terms were “breast milk expression” (MeSH), “breast pump,” and “electric breast pump.” We included the best available evidence according to established evidence hierarchies (typically systematic reviews, meta-analyses, and full economic analyses, where available) and professional guidelines based on such evidence and clinical expertise.

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Policy updates

9/2013: initial review date and clinical policy effective date: 3/2014

2/2019: References updated. The policy number was changed from CP#12.02.01 to CCP.1051.

1/2020: Policy references updated.

1/2021: Policy references updated.

1/2022: Policy references updated.

1/2023: Policy references updated.

1/2024: Policy references updated.

2/2025: Policy references updated. Coverage modified.